

Amendments to the Claims

The listing of claims will replace all prior versions, and listings of claims in the application.

1-82. (Canceled).

83. (New) A pharmaceutical composition comprising:

an isolated polypeptide comprising an amino acid sequence at least 95% identical to amino acids 29-533 of SEQ ID NO: 2, and

a pharmaceutically acceptable carrier;

wherein said composition, when administered to female mice, eliminates or reduces the level of *C. trachomatis* in the lower genital tract following intravaginal challenge.

84. (New) The composition of claim 83, wherein said amino acid sequence comprises amino acids 29-533 of SEQ ID NO: 2.

85. (New) The composition of claim 84, wherein said amino acid sequence is encoded by a polynucleotide comprising nucleotides 466 to 1980 of SEQ ID NO: 1.

86. (New) The composition of claim 84, wherein said amino acid sequence is encoded by plasmid pJJ 36-J having ATTC Accession No. PTA-3719.

87. (Withdrawn-New) The composition of claim 83, wherein said amino acid sequence comprises amino acids 29-534 of SEQ ID NO: 15.

88. (Withdrawn-New) The composition of claim 87, wherein said amino acid sequence is encoded by a polynucleotide comprising nucleotides 82-1599 of SEQ ID NO: 23.

89. (Withdrawn-New) The composition of claim 83, wherein said amino acid sequence comprises amino acids 29-534 of SEQ ID NO: 16.

90. (Withdrawn-New) The composition of claim 89, wherein said amino acid sequence is encoded by a polynucleotide comprising nucleotides 85-1602 of SEQ ID NO: 24.

91. (New) The composition of claim 83, wherein said amino acid sequence comprises amino acids 29-1012 of SEQ ID NO: 2.

92. (New) The composition of claim 91, wherein said amino acid sequence is encoded by a polynucleotide comprising nucleotides 466-3417 of SEQ ID NO: 1.

93. (Withdrawn-New) The composition of claim 83, wherein said amino acid sequence comprises amino acids 29-1013 of SEQ ID NO: 15.

94. (Withdrawn-New) The composition of claim 93, wherein said amino acid sequence is encoded by a polynucleotide comprising nucleotides 82-3036 of SEQ ID NO: 23.

95. (Withdrawn-New) The composition of claim 83, wherein said amino acid sequence comprises amino acids 29-1013 of SEQ ID NO: 16.

96. (Withdrawn-New) The composition of claim 95, wherein said amino acid sequence is encoded by a polynucleotide comprising nucleotides 85-3039 of SEQ ID NO: 24.

97. (New) The composition of claim 91, wherein said amino acid sequence comprises SEQ ID NO: 2.

98. (New) The composition of claim 92, wherein said amino acid sequence is encoded by a polynucleotide comprising SEQ ID NO: 1.

99. (New) The composition of claim 83, wherein said amino acid is encoded by plasmid pAH342 obtainable from *E. coli* BL21 (pAH342) assigned ATCC accession number 98538.

100. (New) The composition of claim 83, further comprising a heterologous polypeptide.

101. (New) The composition of claim 100, wherein said heterologous polypeptide is selected from the group consisting of a pre or pro sequence, an affinity purification peptide, a heterologous immunogenic peptide, and a combination of two or more of said heterologous polypeptides.

102.(New) The composition of claim 83, further comprising an adjuvant.

103.(New) The composition of claim 102, wherein said adjuvant is selected from the group consisting of alum, mLT, QS21, MPS, Freund's complete adjuvant, and a combination of two or more of said adjuvants.

104. (New) The composition of claim 83, further comprising a targeting molecule combined with or conjugated with said polypeptide.

105. (New) The composition of claim 104, wherein the targeting molecule is selected from the group consisting of vitamin B12, bacterial toxins or fragments thereof, monoclonal antibodies, proteins, nucleic acids, carbohydrates, and a combination of two or more of said targeting molecules.

106. (New) The composition of claim 83, which is formulated as a microparticle, a capsule, a liposome preparation, or an emulsion.

107. (New) The composition of claim 83, wherein said polypeptide when administered to a subject induces a cellular immune response or a humoral immune response that recognizes the polypeptide of SEQ ID NO:2.

108. (New) A pharmaceutical composition comprising:

an isolated polypeptide comprising an amino acid sequence at least 95% identical to amino acids 29-533 of SEQ ID NO: 2, and

a pharmaceutically acceptable carrier;

wherein said polypeptide when administered to a subject induces a cellular immune response or a humoral immune response that recognizes the polypeptide of SEQ ID NO:2.

109. (New) The composition of claim 108, wherein said amino acid sequence comprises amino acids 29-533 of SEQ ID NO: 2.

110. (New) The composition of claim 109, wherein said amino acid sequence is encoded by a polynucleotide comprising nucleotides 466 to 1980 of SEQ ID NO: 1.

111. (New) The composition of claim 109, wherein said amino acid sequence is encoded by plasmid pJJ 36-J having ATTC Accession No. PTA-3719.

112. (Withdrawn-New) The composition of claim 108, wherein said amino acid sequence comprises amino acids 29-534 of SEQ ID NO: 15.

113. (Withdrawn-New) The composition of claim 112, wherein said amino acid sequence is encoded by a polynucleotide comprising nucleotides 82-1599 of SEQ ID NO: 23.

114. (Withdrawn-New) The composition of claim 108, wherein said amino acid sequence comprises amino acids 29-534 of SEQ ID NO: 16.

115. (Withdrawn-New) The composition of claim 114, wherein said amino acid sequence is encoded by a polynucleotide comprising nucleotides 85-1602 of SEQ ID NO: 24.

116. (New) The composition of claim 108, wherein said amino acid sequence comprises amino acids 29-1012 of SEQ ID NO: 2.

117. (New) The composition of claim 116, wherein said amino acid sequence is encoded by a polynucleotide comprising nucleotides 466-3417 of SEQ ID NO: 1.

118. (Withdrawn-New) The composition of claim 108, wherein said amino acid sequence comprises amino acids 29-1013 of SEQ ID NO: 15.

119. (Withdrawn-New) The composition of claim 118, wherein said amino acid sequence is encoded by a polynucleotide comprising nucleotides 82-3036 of SEQ ID NO: 23.

120. (Withdrawn-New) The composition of claim 108, wherein said amino acid sequence comprises amino acids 29-1013 of SEQ ID NO: 16.

121. (Withdrawn-New) The composition of claim 120, wherein said amino acid sequence is encoded by a polynucleotide comprising nucleotides 85-3039 of SEQ ID NO: 24.

122. (New) The composition of claim 116, wherein said amino acid sequence comprises SEQ ID NO: 2.

123. (New) The composition of claim 122, wherein said amino acid sequence is encoded by a polynucleotide comprising SEQ ID NO: 1.

124. (New) The composition of claim 108, wherein said amino acid is encoded by plasmid pAH342 obtainable from *E. coli* BL21 (pAH342) assigned ATCC accession number 98538.

125. (New) The composition of claim 108, further comprising a heterologous polypeptide.

126. (New) The composition of claim 125, wherein said heterologous polypeptide is selected from the group consisting of a pre or pro sequence, an affinity

purification peptide, a heterologous immunogenic peptide, and a combination of two or more of said heterologous polypeptides.

127.(New) The composition of claim 108, further comprising an adjuvant.

128.(New) The composition of claim 127, wherein said adjuvant is selected from the group consisting of alum, mLT, QS21, MPS, Freund's complete adjuvant, and a combination of two or more of said adjuvants.

129. (New) The composition of claim 108, further comprising a targeting molecule combined with or conjugated with said polypeptide.

130. (New) The composition of claim 129, wherein the targeting molecule is selected from the group consisting of vitamin B12, bacterial toxins or fragments thereof, monoclonal antibodies, proteins, nucleic acids, carbohydrates, and a combination of two or more of said targeting molecules.

131. (New) The composition of claim 108, which is formulated as a microparticle, a capsule, a liposome preparation, or an emulsion.

132. (New) The composition of claim 108, wherein said composition, when administered to female mice, eliminates or reduces the level of *C. trachomatis* in the lower genital tract following intravaginal challenge.